Notice of Allowability	Application No. 09/914,212	Applicant(s) ELLIS ET AL.	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed 2/4/04 and telephonic interview conducted 4/12/04*.

2. ☒ The allowed claim(s) is/are *21-24,26,27,29,30,33 and 38-53*.

3. ☐ The drawings filed on _____ are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 8/23/01
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *4/12/04* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Callie E. Shosho
Primary Examiner
Art Unit: 1714

Examiner' Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

(1) Claim 21, line 10, after "polymer", delete the second period.

(2) Claim 24, line 1, after "(a)", delete "and component (b) are each independently" and insert "is".

2. Authorization for this examiner's amendment was given in a telephone interview with Richard Steinberg on 4/12/04.

Statement of Reasons for Allowance

3. In the office action mailed 11/25/03, claims 40-53 were indicated as allowed, claim 25 was indicated as objected to, and claims 21-24, 26-27, 29-30, 33-36, and 38-39 were rejected.

In response, in the amendment filed 2/4/04, applicants have cancelled claims 25 and 34-36 and inserted the limitation of cancelled claim 25 into independent claim 21.

Thus, the present claims 21-24, 26-27, 29-30, 33, and 38-53 are allowable over the "closest" prior art Anton et al. (U.S. 6,005,023), Overbeek et al. (U.S. 5,962,571), and Beck et al. (U.S. 5,932,629) for the following reasons:

Anton et al. disclose ink jet ink comprising water, carbon black, and graft copolymer which possesses weight average molecular weight of 5,000-100,000 and comprises hydrophobic polymeric backbone obtained from (meth)acrylates and hydrophilic macromer sidechains made from ethylenically unsaturated carboxylic, sulfonic, sulfinic, phosphoric, and phosphonic acids which possesses weight average molecular weight of 1,000-30,000. However, there is no disclosure that the carbon black carries water-dispersible groups as required in present claim 21. Further, there is no disclosure or suggestion or suggestion in Anton et al. that the ink comprises hydrophobic polymer having number average molecular weight more than 40,000 wherein the hydrophobic polymer comprises a mixture of hydrophobic acrylic polymer and hydrophobic polyurethane polymer as now required in present claim 21. Additionally, Anton et al. disclose hydrophilic polymer which is obtained from ethylenically unsaturated acids which is in direct contrast to present claim 40 which requires hydrophilic polyurethane polymer.

Overbeek et al. disclose ink comprising water, pigment, hydrophilic polymer obtained from acid comonomers which possess number average molecular weight of 5,000-50,000 and hydrophobic polymer obtained from (meth)acrylates which possesses number average molecular weight of greater than 50,000. However, there is no disclosure of carbon black that carries water-dispersible groups as required in present claim 21. Further, there is no disclosure or suggestion in Overbeek et al. that the hydrophobic polymer comprises a mixture of hydrophobic acrylic polymer and hydrophobic polyurethane polymer as now required in present claim 21. Additionally, Overbeek et al. disclose hydrophilic polymer that is obtained from acid comonomers which is in direct contrast to present claim 40, which requires hydrophilic polyurethane polymer.

Beck et al. disclose printing ink comprising water, carbon black, hydrophobic polymer obtained from (meth)acrylates which possesses number average molecular weight of 5×10^4 to 5×10^5 and hydrophilic polymer obtained from (meth)acrylic acid which possesses number average molecular weight of 500-20,000. However, there is no disclosure of carbon black that carries water-dispersible groups as required in present claim 21. Further, there is no disclosure or suggestion in Beck et al. that the hydrophobic polymer comprises a mixture of hydrophobic acrylic polymer and hydrophobic polyurethane polymer as now required in present claim 21. Additionally, Beck et al. disclose hydrophilic polymer which is obtained from (meth)acrylic acid which is in direct contrast to present claim 40 which requires hydrophilic polyurethane polymer.

Thus, it is clear that Anton et al., Overbeek et al., and Beck et al., either alone or in combination, do not disclose or suggest the present invention.

In light of the above, the present claims are passed to issue.

Applicants' IDS filed 8/23/01 has now been considered. The present claims are allowable over the prior art cited in the IDS for the following reasons:

Rosthauser et al. (U.S. 4,925,885) disclose aqueous composition comprising polyisocyanate, hydroxyl terminated polyurethane prepolymer possessing average molecular weight of 500-10,000, and epoxy resin possessing average molecular weight of 150-20,000. However, there is no disclosure of ink as required in all the present claims and thus, no disclosure of pigment as required in all the present claims. Further, there is no disclosure or suggestion in Rosthauser et al. of hydrophobic polymer possessing number average molecular weight of more than 40,000 as required in all the present claims. Additionally, there is no disclosure or suggestion of hydrophobic polymer that comprises a mixture of hydrophobic acrylic polymer and hydrophobic polyurethane polymer as required in present claim 21.

EP 796901 discloses ink jet ink comprising water, pigment having functionalized surface, and core-shell polymer obtained from hydrophilic monomer and hydrophobic monomer wherein the core-shell polymer possesses number average molecular weight of 3,000-20,000. However, there is no disclosure or suggestion in EP 796901 that the ink comprises hydrophobic polymer having number average molecular weight more than 40,000 wherein the hydrophobic polymer comprises a mixture of hydrophobic acrylic polymer and hydrophobic polyurethane polymer as required in present claim 21. Further, there is no disclosure or suggestion in EP 796901 of hydrophilic polyurethane polymer possessing number average molecular weight less than 30,000 as required in present claim 40.

EP 822238 discloses ink jet ink comprising water, pigment carrying water-dispersible groups, block copolymer comprising hydrophobic polymer and hydrophilic polymer, and random copolymer obtained from hydrophilic monomers and hydrophobic monomers. Both the block copolymer and random copolymer possess number average molecular weight below 20,000. However, there is no disclosure or suggestion in EP 822238 of hydrophobic polymer possessing number average molecular weight more than 40,000 as required in all the present claims or of hydrophobic polymer that comprises a mixture of hydrophobic acrylic polymer and hydrophobic polyurethane polymer as required in present claim 21. Further, there is no disclosure or suggestion in EP 822238 of hydrophilic polyurethane polymer possessing number average molecular weight less than 30,000 as required in present claim 40.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
4/12/04